Patentclaims

1. One or more network components within a telecommunication network wherein said network is a serial bitstream network and the network components are comprising one or more inverse multiplexers
characterized in that said multiplexer(s) is/are TDM bonding multiplexers.

2. One or more network components according to claim 1, characterized in that said multiplexer(s) utilize(s) spare bits and/or FAS bits in a protocol for control of specific functions of the inverse multiplexer(s).

3. One or more network components according to claim 2, characterized in that said protocol is a protocol in accordance with ITU recommendations G.704.

4. One or more network components according to one of the preceding claims, characterized in that in said protocol a basic frame is defined, and multiframes and the spare bits within these frames are used for control of specific functions of the inverse multiplexer.

5. One or more network components according to claim 4, characterized in that said functions include one or more of the following:

measurement of differential delay between transmission lines at the receiving end, and/or

securing correct transmitter and receiver timeslot sequence by link identification, and/or

monitoring channel availability by block error checking.

6. One or more network components according to claim 5, c h a r a c t e r i z e d i n that said measurement of the differential delay at its maximum can have the length of a basic frame when in basic frame mode,

the length of a multiframes when in multiframe mode;

and the length of a multi-multiframe when only the spare bit for sequence numbering is used.

7. One or more network components according to claim 6, c h a r a c t e r i z e d i n that said measurement of differential delay at its maximum can have the values of 125µs for a basic frame or 2ms (16*125µs) for a multiframes or 64ms (32*2ms) for a multi-multiframe pattern.

8. One or more network components according to claim 5, c h a r a c t e r i z e d i n that said measurement of differential delay is given by the FAS (frame alignment signal).

9. One or more network components according to claim 4 or 5, c h a r a c t e r i z e d i n that the spare bits can be used for line identification for up to 2^x where x is the number of spare bits.

10. One or more network components according to claim 1, c h a r a c t e r i z e d i n that said TDM bonding multiplexer(s) are/is inverse multiplexing:

E1 signals to 4 cable pairs of SHDSL, or

E2 signals to 4 lines of E1 signals, or

any other combination of E2 or E1 inverse multiplexing.

11. A method for inverse multiplexing of one or more serial bitstreams within a telecommunication network c h a r a c t e r i z e d i n that said method uses spare bit and/or frame alignment signals from a protocol to:

measure differential delay between transmission lines at the receiving end, and/or

secure timeslot integrity by compensation for individual link delay, and/or

secure correct transmitter and receiver timeslot sequence by link identification, and/or

monitor channel availability by block error checking.

12. A method according to claim 11, c h a r a c t e r i z e d i n that said protocol is defined within the ITU recommendation G.704.

13. A method according to claim 11, c h a r a c t e r i z e d i n that the one or more serial bitstream are TDM signals.

14. A method according to claim 11, c h a r a c t e r i z e d i n that said measurement of differential delay at its maximum can have the length of a basic frame when in basic frame mode;

the length of a multiframe when in multiframe mode;

and the length of a multi-multiframe when only the spare bit for sequence numbering is used.

15. A method according to claim 14, c h a r a c t e r i z e d i n that said measurement of differential delay at its maximum can have the values of

125µs for a basic frame, or 2ms (16*125µs) for a multiframe or 64ms (32*2ms) for a multi-multiframe pattern.

16. A method according to claim 11, characterized in that said measurement of differential delay is given by the FAS (frame alignment signal).

17. A method according to claim 11, characterized in that the spare bits can be used for line identification for up to 2^x where x is the number of spare bits.

18. A method according to claim 11, characterized in that said TDM bonding multiplexer(s) are/is inverse multiplexing:

E1 signals to 4 cable pairs of SHDSL, or

E2 signals to 4 lines of E1 signals, or

any other combination of E2 or E1 inverse multiplexing.